

AVIATION WEEK

A MCGRAW-HILL PUBLICATION

OCT. 1, 1951

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AVIATION CALENDAR

- Oct. 2-4-Seventh annual aircraft spark plug and ignition conference sponsored by the Champion Spark Plug Co. of Toledo.
- Oct. 4-International national mechanical and engineering display and aircraft production forum, sponsored by Society of Automotive Engineers, Bellevue Hotel, Los Angeles.
- Oct. 4-1932 annual meeting of the American Conference on Aeronautics, Ohio State Univ., Wright Patterson AFB is scheduled as meeting.
- Oct. 4-1932 annual convention, National Defense Transportation Ass., Plaza Hotel, San Antonio, Tex.
- Oct. 4-1932-Special conference on aircraft electrical applications, sponsored by the air transportation committee of the American Institute of Electrical Engineers and the Los Angeles section of the Institute, Hollywood Roosevelt Hotel, Hollywood.
- Oct. 8-Air transport section, National Safety Council, Palmer House, Chicago.
- Oct. 10-1932-1931 conference on airport management and operation, University of Oklahoma, Norman, Okla.
- Oct. 11-14-Air fair at Los Angeles International Airport.
- Oct. 11-Holderness for Non-Destructive Testing training course, starting with discussions on jet engine post inspection Hotel Detroit, Detroit.
- Oct. 16-17-Fourth annual New York State conference on airport development and operation, sponsored by the N. Y. State Dept. of Commerce, N. Y. Aviation Trades Ass., Area of Town of the State, Conference of Niagara County Officers Assn and the N. Y. State Flying Farmers Organization Hotel, Syracuse, N. Y.
- Oct. 12-14-National Electronics Conference & Exhibition, Edgewater Beach Hotel, Chicago, Ill.
- Oct. 15-McWick Infantry & Transport Assn of Canada annual conf. meeting, Seagrave Club, Montreal, Quebec.
- Oct. 19-21-National transportation meeting of Society of Automotive Engineers, Hotel Macdonald, Chicago.
- Oct. 24-25-1931 annual convention of the National Assn. of State Aviation Officials, Arizona Inn, Tucson, Ariz.
- Oct. 31-New, Independence of Automobile Engineers, lunch and luncheon meeting, Drake Hotel, Chicago.
- Nov. 1-New York Wing Club Dinner, Waldorf Astoria, New York.
- Nov. 2-8-Seventh annual national conference on industrial hydraulics, sponsored by the graduate school of Illinois School of Technology and Aeronautics Research Foundation, Statton Hotel, Chicago.
- Dec. 4-5-Transport aircraft hydraulic assembly and options conference, Hotel Sheraton, Detroit.

PICTURE CREDITS

Boeing-Stearns photo, McDonnell; Gracie Coopers; Howard Levy, Gracie; 14-McDonnell-323 World Super, 14-Corona; 15-LA-200-1000; 16-McDonnell-323 World Super, 16-Corona; 17-14-McDonnell-323 World Super, 17-Corona; 18-14-McDonnell-323 World Super, 18-Corona; 19-14-McDonnell-323 World Super, 19-Corona; 20-14-McDonnell-323 World Super, 20-Corona; 21-14-McDonnell-323 World Super, 21-Corona; 22-14-McDonnell-323 World Super, 22-Corona; 23-14-McDonnell-323 World Super, 23-Corona; 24-14-McDonnell-323 World Super, 24-Corona; 25-14-McDonnell-323 World Super, 25-Corona; 26-14-McDonnell-323 World Super, 26-Corona; 27-14-McDonnell-323 World Super, 27-Corona; 28-14-McDonnell-323 World Super, 28-Corona; 29-14-McDonnell-323 World Super, 29-Corona; 30-14-McDonnell-323 World Super, 30-Corona; 31-14-McDonnell-323 World Super, 31-Corona; 32-14-McDonnell-323 World Super, 32-Corona; 33-14-McDonnell-323 World Super, 33-Corona; 34-14-McDonnell-323 World Super, 34-Corona; 35-14-McDonnell-323 World Super, 35-Corona; 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new book explains

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Remington Rand

WHO'S WHERE

In the Front Office

Blissell Edger has been named vice president-general manager of development and controls for Saunders Associates, Inc., Tarrytown, N. Y., and M. J. Eassey has been designated vice president-general manager for the firm's plant located in the Virginia, Va., area. Holmes joined the company in 1941, formerly was associated with Western Electric. Eassey came to Saunders in 1940 has been in charge of manufacturing operations at the Virginia plant since 1946. **Work Wins It.**

Frank M. Salzman has been made president of Lafayette Aerial Products Co., Inc., according to C. R. Van Sower who retired recently. Salzman's previous position was as vice president-engineering. Prior to joining Lafayette, he had been with Douglas Aircraft, Hughes Aircraft, Harman Engineering Corp., and Airborne Equipment. Lafayette is now engaged in making precision aircraft, missile and electronic components.

Changes

Cy Fene has been named assistant chief engineer in charge of the Corp.'s Machine Division. Milton A. Shaping has been designated manager of quality control at the Fairchild Aircraft Division, Hagerstown. New department director at the plant include Phil Blum, quality control, J. Earl Steinmetz, plant operations, and J. M. McLaughlin, maintenance.

William H. Van Camp has been designated sales engineer in the Southern California area for Ford division, General Motors Corp. J. Don Balaban has been named factory manager at Press Engineering & Mfg. Corp., Dallas, Tex.

F. Donald Fringing is the new manager of public relations and advertising at Radio division of Radio America, Baltimore, according to Lee G. Smith who has taken another post in Detroit. New sales representative in the Delaware-Haverly, Yorktown has been appointed as manager of permanent sales J. Walter Collier has been made manager of USAP sales, and Walter G. Light has been named assistant manager of government sales. Allen Kahn has been appointed assistant relations director of Radio America's Union, N. Y. division.

Richard L. Ross has been appointed publicity manager of Lockheed Aircraft Corp., according to Ned Ross, who moved to General Motors. Wm. DeGuzman has been named head of Lockheed Aircraft Services commercial department at Burbank, Calif. R. R. Wright has joined Selig Aircraft, Aviation Advisory Service, in new research position.

E. J. Budd Huber, public relations director for Pacific Telephone Corp., has agreed to take up a similar post beginning Oct. 1 with its East Coast telephone line. Walter Babson, Pacific telephone relations director, also left the company last month, but hasn't revealed his future plans.

INDUSTRY OBSERVER

Navy's transportable and very high-speed Chance Vought F7U Celene fighter will soon go into regular service after a "big" experimental program which was probably its entrance in very recent experimental plane history. Production model is the F7U-3, powered with two Westinghouse J46 engines. Part of the early transporter Navy jet fighter, in the second 700-mph. class, the Celene will also probably be the first Navy plane to service which can compete with the surprising Russian MIG 15 on a speed basis.

McDonnell Aircraft Corp. developments of short altitudes have been a well-paying by product of the firm's major engineering program for helicopters. Part of the power-plant altitudes was developed for McDonnell F2H Banshee, but now recently experimental contracts have been awarded to design and build "Shrike" aircraft, the new model Altair and General Electric turboprops, although neither of these engines currently is used in a McDonnell plane. Until now all the McDonnell jet fighter designs mentioned have used Westinghouse jet powerplants.

Navy in developing Grumman F9F-2 and F9F-3 Panthers and McDonnell F2H Banshees to second-line jet fighter status in fiscal 1952, with the expectation to compare that the airplanes have been outperformed on the front line by the Russian MIG-15 jet fighter, "the bad test of whether or not an airplane is first-line." Navy now calculates that first line life of a fighter is from 2½ to 3 years.

Packard Motor Car Co. will be able to produce all the smaller forgings for its J-47-33 and J-47-35 jet engine production at the new Union, Mich., assembly plant, including its own brackets and blades, as a result of its new large plant, recently being added in Detroit.

Continental Motors entry into the gas turbine field by getting license for use types of French Turbomeca-developed turbines for American production use marks the first practical step in this country toward large-scale turbine power for small business and military planes. Probably the first aircraft application of the engine, which covers a wide range of relatively low powers, will be military-for target planes, guided missiles, helicopters, and launch craft. As the largest producer manufacturer of small gas-turbine aircraft engines, Continental should know the problems of small turbine development thoroughly. There is already industry speculation as to how long it will be before there is a Continental Motors Turboprop for aircraft engines powered by turbines, replacing the piston-engine engine used on aircraft which the company has been operating.

Northwest Airlines is studying its proposal to install Sperry engine analysis in its Stratocruiser fleet (page 35). After NWA issued a press release stating it had decided to adopt the Sperry unit, Boeing Scientific received its efforts to sell its own analyzer (Aviation Week & Space, p. 36) to Northwest. So the airline has delayed placing an order with Sperry until it concludes its investigations of the Boeing device.

A turboprop 10-92 passenger transport that will carry a 25,000 lb. payload at 590 mph over a 1400 mi range at 1,100 ft. at a cruise altitude of 31,000 ft. is what the Bristol Aeroplane Co., Ltd., is working to have in its new Type 175 transport, designed for long range BOMAC routes. The 175's Bristol Propeller turboprop rate at 3,000 shp. per plane 500 lb. thrust each. Caliber is powered by gas turbines to 35,000 in thrust the jet of Harland coast can stretch its range. The Model 175 will be the British plane for Americans to beat on the trans-Atlantic route, U.S. airline observers say.

Pitt & Whitney T-34 turboprop engine originally rated at 5,700 hp, is now rated up to 6,000 hp, indicating at least a slight step up in power from the rating of a year ago. P&W has awarded a major subcontract to All-Canadian Mfg. Co. to help build the T-34, scheduled in the powerplant for USM's giant YC-14 transport.

The New Secretary

A Naval aviator in World War I and the Assistant Secretary of War for Air who directed the boost in bomber output from five to four a month up to 1,600 during World War II, Robert A. Lovett is reported in Washington as the first major air enthusiast to sit the top Defense post since it was established by the 1947 Unification Act.

Aviation men, though, are keeping their fingers crossed. They recall the case of ex-Defense Secretary Louis Johnson.

Aviation critics were wiser to his appointment. Johnson, as post-World War II Assistant Secretary of War for Air, was billed in the press as a steppingstone for his postwar.

But they soon were wrong for his retirement as Secretary, Johnson ratherly stated his power under a banner of "economy."

Count on businessman Lovett to exercise prioritizing one and another on spending defense dollars. He was largely responsible for cutting back the defense budget requests for a total \$104 billion last January to \$66 billion. That drastic understanding added to his already high prestige with Congress, was performed with a delicacy that left the services reasonably satisfied.

But count on him, too, as an aviator in continuing military expansion the historic role of the civilian economy.

Coming on the horizon is a new problem for the new Secretary: a revised administration in Navy command.

First questions by Navy's new Secretary, Dan Klumbe, and new Chief of Naval Operations, Adm. William M. Friedman, make it associatively clear they will push for more emphasis on Naval aviation in the defense buildup. Said Klumbe: "I want a new fast-track order for the Navy air arm every year for the next five or twelve years."

Navy's New Chief

Expert Adm. William M. Friedman, new Chief of Naval Operations, is to be a commander on air power.

The admiral's evolution of his effectiveness. "An attack alone will not stop the advance of the Russian army against Western Europe. In Korea there has been no appreciable enemy opportunity to one of the air and though we have had a score of approximately 150 miles over which our air effort was free to operate, there still has been no effective retardation of the enemy advance by means of air alone, including Naval aviation."

But, as between USAF and Naval air power, look for Friedman to place more emphasis on the Naval air arm in the defense buildup.

Friedman's observation: "Remember always that Naval aviation is an integral part of the air power of the U.S."

"A navy, mobile and ready, is an instrument particularly well adapted to the maintenance of peace on defense."

"I do not mean to suggest that the Navy alone can accomplish the whole business of mounting a defense force abroad. Troops are needed which must come from the Army. The power of the Air Force will be required in the sense of prospective action."

But the Navy is primarily well adapted for a large share of the work."

On two basic issues, the Navy's new Chief puts himself in domestic opposition to USAF's leadership:

- Should there be "balanced" forces? Or should there be a priority of weapons—with air power, which would have to bear the initial brunt of an attack with satellites and air defense—getting the top priority?
- Will the next war be fought with World War II weapons?

Friedman's position on the first point: "To abandon without good reason the proven principle of balance is the provision of armaments in favor of a provision of armaments on the basis of priorities in weapons would not only be wasteful of effort, but would reduce the effectiveness of anti-air weapons to the danger point."

"In fact one of the reasons I so earnestly support the principle of service balance is that a system of priorities in the provision of armaments could result in a curtailment of Naval aviation . . . of steel for tanks . . . etc."

In contrast, this is the position of Chief of Staff Gen. Ross W. Vandenberg.

"Vandenberg: 'What we have to balance our forces toward is the threat not against each other. We must balance our forces against the enemy and his forces and his potential.'"

Friedman's view is agreed to weapons of the next war. "To all military men, it is clear emphasis, I suggest to you that the next war, if it comes, will be fought by personnel who will be and will remain at or near the state of action, and that the conventional type of warfare with which we are all familiar has not become obsolete."

Friedman's continuing advice: "We must not shy from to battlefield ideas which will no longer be valid once atomic weapons are made plentiful. We must use the new resources we will develop not only to strengthen the strategic capabilities of the Air Force at we now observe them, but also to find new and novel uses for the old war weapons."

Senate Investigation

Senate Preparedness Committee, headed by Sen. Lyndon Johnson, under the staff direction of Securities and Exchange Commission's new chairman, Donald Cook, is investigating the defense procurement program here.

• **Procurement.** Johnson has long left the Office of Defense Mobilization and the position as "dangling" aren't getting defense from military production. The group is gathering extensive data—date of obligation of money, date of contract-making, date of scheduled delivery, date of actual delivery—with an eye to getting an overall view as to whether output is generally lagging, or just is spot, and why.

• **Profit.** The committee is looking into the profits over the past six years of approximately 1,000 major firms, rising from both capital investment and sales.

• **Defense organizations.** The group is considering the defense set-up to see if it properly organized for smooth operation, and operating efficiently.

Johnson observed: "We're interested generally in performance under the defense program, and specifically in our methods of government money in construction."

Investigative staff's spotlight is now on General Motors Corp.'s performance and profits.

—Katherine Johnson

AVIATION WEEK

Shake-up Coming in Materials Controls

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- NPA's system of allocations has brought such tangles that even the laymen are worrying.

- So look for a return to the World War II set-up of unified controls with one office in charge.

- But while the change definitely is in prospect, details can't be worked out much before next April.

By Alexander McSwery

Defense planners soon will return to the World War II system of unified controls on materials for military aircraft—the system which made it possible the tremendous production records which were achieved by U.S. industry in the mid-1940s.

Reluctantly some key government officials at Montgomery Ward, Aircraft Production Board and Defense Production Administration are swinging around to the view that the current industry has held for the last year, that unified controls offer the only system that will work again.

Defense Mobilization Charles E. Wilson doesn't want to reverse the materials control set-up and make a special place for aircraft components which he has so. But observers feel the national production authority has made a poor record that the chopping off materials vital for military aviation, and this has left little choice.

Probably the set-up will not be changed until the end of the quarter of 1952. That is about as far as the switch could be made under industry circumstances.

Pressure Groups—But even the pressure is building up to a point where already some aircraft components are

getting special materials preference while others find it hard to get the needed materials allocations. Such a situation is not expected to last much longer than it takes the last fortunate components manufacturers to get out about it.

Thus Washington defense agencies will have four ideas, it is anticipated, with which they will not be denied until they get similar treatment on their military priority production.

Leading gear shops, wheel makers and at least two other component shops have already gotten preferential treatment through Montgomery Ward, followed Washington sources and that work. With this opening wedge it is not expected that other quality component shops can be denied similar priority.

Montgomery Ward opposition to a special controls plan for all aircraft materials, but in the reasoning that if it is done for aircraft it will have to be done for tanks and other high priority military production. Proponents of the special military control policy "And what's bad about that?"

• **The Privatization.** The new control system, if and when it comes, will probably permit parts outside the aircraft materials allocation plan of World War II under War Production Board's Aircraft Division.

In Washington it may seem less and less emphasis on NPA's Aircraft Division which has never done the job it should in protecting aircraft interests in the overall economy, in the spirit of new "selective" aircraft industry changes.

If it had, the new Aircraft Production Board Chairman, Harold Bower would not have been forced into the troublesome expenditure job for the aircraft industry which he has been doing ever since he was appointed to the post in August.

Bower's appointment was at a policy level as an advance to Defense Mobilization Charles E. Wilson, but he has been so busy looking beyond and getting out first that his policy reports to Wilson have been strictly on "on-the-run" basis.

Despite on how soon the aircraft materials requirements which will be issued on NPA's list will be taken off and given some special preferential treatment probably will go to Wilson's hands. However, as some high political considerations, which are the

The Trouble With Controls . . .

Here are two of the latest examples that illustrate the when they might say controls for aircraft production inevitably will have to be put under unified control.

Aluminum rivets needed for military aircraft production in the first quarter of 1952 will require 2.6 million lb. of aluminum, Air Force and Navy determined. That much aluminum should be in the hands of the next quarter in the fourth quarter of this year.

But NPA allowed the rivet stock on only 1.5 million lb. of aluminum for the 1951 fourth quarter. With the rivet manufacturers' protest, that number was increased to 1.8 million lb. of aluminum.

Because some of Alcoa's rivets are used in both military and industrial production, NPA per Alcoa is the general industrial equipment section.

So Alcoa got an N-4 allocation, which is for goods not otherwise classified. Under this, the company got its full allocation for the third quarter of 1951. But its request for a fourth-quarter allocation was rejected when it made application for that period.

and means why the missile won't sit up idly, in the first place.

Butler Jr. Goes-Obviously it goes back to the better-and-gone philosophy on which the whole present defense program has been predicated. And obviously a special category for all military aircraft materials will mean less materials for some civilian production. But taking a look at the overall military picture, obviously any first it is either civilian or military production that has to feed the appetite and right now.

If military schedules, already stretched to a dangerous calculated risk in the opinion of many, are to be kept, NPA can't go on making across-the-board cuts on materials which go into military aircraft.

Eventually, Mobilizer Wilson reports this country's productive capacity on materials will be built up to where at least a very high level of civilian production can be maintained along with the military production. But this kind of materials supply is not yet available and until it is, some better assurance has to be provided to keep military aircraft in production schedule.

■ Suggested Plans-Two suggestions are discussed for handling component materials for military aircraft.

■ Set up a special new "Byproduct" list for such components which would have equal priority with other military materials requirements.

■ Reserve all aircraft components from NPA controls. Current NPA set up has the Aircraft Division classified within the "Federal, Leather and Specialty Business" of NPA.

New pressure on the components materials question has arisen recently, as a result of the general tightening of materials in the Controlled Materials Plan which effect.

Another component manufacturer generally have been following the old American tradition. Don't bother before you are hurt. As long as they were getting their materials and even had some for some civilian production as well, they accepted the maximum NPA set-up.

But, with a higher and higher percentage of their production becoming military, up to 90% and more in many cases, the across-the-board cuts by NPA on their former materials supplies hurt, and hurt badly, both the individual manufacturers and the aircraft which they are committed to build.

Another aspect of the materials question coming up is what to do about APRA, the Aircraft Production Resources Agency, newly organized by Air Force, Navy and Army, under Mobilizer Board chair.

A snuffing of this agency and a consolidation of its powers and duties, which may bring it more closely in line with the old Aircraft Scheduling Unit operated during World War II, may be in the offing. If it should come, APRA or its successor might be hoped to handle the components materials question along with the primary aircraft materials job.

Missiles' Future Stirs Congress

But military now finds that it must caution legislators that time has not yet arrived to drop conventional weapons.

Defense spokesmen now find themselves in the position of trying to hold the reins on congressional enthusiasm for guided missiles which they had formerly tried to stimulate.

The announcement by Army at a contract award to Fairchild, Tex. and Babcock Co. for an undirected missile of Douglas-designed and developed Corporal E tactical missiles, following shortly after USAF's announcement of formation of a B-61 guided missile squadron (Aircraft Week Sept. 24, p. 120) has helped bring this situation about.

■ Congress Eager-Last week Sen. Bruce McMillan, who heads the joint Congressional Committee on Atomic Energy, introduced a resolution calling for defense authorities to "go all-out on atomic production and development." In a speech in the Senate floor Mc-

Millan asked for an increase in atomic expenditures from \$5 billion to \$6 billion.

What this action should have, McMillan told the Senate, is an atomic Army, Navy and Air Force, in place of the conventional divisions on now standing. McMillan said that the nation's military could do with far less fuel and ammunition and far more guided missiles with atomic warheads.

Department of Defense spokesmen, following McMillan's enthusiastic appeal for atomic weapons and guided missiles pointed out that we still have no across-the-board guided missiles, atomic-powered aircraft engines, atomic or subatomic, and that these additions to the military services will still some time distant. Until those items are proved, these spokesmen said, we had better go slow on plans to whittle down the stand-

ing armies and conventional weapons and planes.

The Corporal E, first of several scheduled for production for Army tactical ground operations, is said to be about 10 ft in length and weigh about 13,000 lb., including a movable warhead. Due to its assignment to tactical combat operations, range of the Corporal E probably falls between 50 and 60 miles. And based upon performance of other Corporal E missiles in the Douglas Aircraft facility there for several, the latest weapon probably would have a maximum velocity capability between Mach 4 and 5.

■ Fission Motor-Mobilizer the Merit Mobilizer in the first guided missile version to enter production and weapon status for service use in the United States, the Douglas WAC Corporal, available in the Corporal series, class distinction of being the first guided missile of any type to be designed and built entirely in the country.

It was Army's WAC Corporal which set a 1449 altitude record of 240 miles (Aircraft Week Sept. 24, p. 120). The WAC was fired from the nose of the V-2 after it had climbed to 100 miles altitude, beginning in effect a two-stage rocket. The WAC then used its own power climbed another 120 miles and attained a top speed of some thing over 5,000 mph.

Entry of the Merit Mobilizer and the Douglas Corporal E to weapon status marks the beginning of a new aspect of war, for these are the first true U.S. guided missiles. The field of such weapons first gained prominence during World War II with German utilization of the V-1 buzz-bomb and V-2 rockets, but the trajectory in course of this could not be altered automatically while in flight.

Another type of manually controlled missile developed from World War II experience is the Bell Venom beam-riding missile which course corrects by a controlled diving vertical descent. These have been other air-launched missile test vehicles such as Bumble and the Nike that developed in the latter stages of World War II, which were never wholly satisfactory.

Aluminum Supply Depends on Rain

The possibility that power shortages might force reduction of heavy electrical Northwest aluminum production plants of Reynolds, Kaiser and Alcoa was under study in Washington last week. Such a move could have far-reaching effects on aviation manufacturers.

With aluminum as one of the key materials used in aircraft production, the moving of approximately one-half the nation's aluminum producing plant capacity obviously could cause a severe dislocation of materials scheduling, just barely among the many West Coast companies which are principal sources of U.S. military aircraft and guided missiles.

A spokesman for the Office of Defense Mobilization told Aircraft Week that the whole question could be settled by a matter as simple as three inches of rainfall. Defense electric power administration has warned that low water levels in rivers from which the Washington Oregon Idaho region gets its power, may make necessary a power "brown-out" in the area.

At a Washington press conference last week Henry J. Koster announced that he had proposed to Defense Mobilizer Wilson alternative solutions to the current power shortages in the Northwest until additional power does scheduled in turn 1,675,000 kw additional into the Northwest system could be added.

Kaiser proposed curbing non-essential use of electricity and suggesting making power by using shops in forcing powerplants, or diesel electric locomotives as emergency power sources. He and that reducing the Northwest aluminum production would not be economic or practical and would result in loss in aluminum capacity, profits there in the Northwest perishes remains in their present locations until economic power is available.

■ Those Affected-Five aluminum producing plants in Oregon and Washington and two plants in Washington and Montana will have a combined output of about half the nation's total supply. They include:

- Reynolds, Portland, Ore., 72,000 tons a year, and Langston, Wash., 10,000 tons.
- Kaiser, Spokane, 125,000 tons, and Arcata, 25,000 tons.
- Alcoa, Vancouver, \$5,000 tons, and scheduled new facility at Wenatchee, Wash., \$3,000 tons.
- Harvey Mowbray Co., scheduled new facility at Kelso, Mont., \$4,000 tons.

Defense Mobilizer Charles E. Wilson has sent telegrams to all the major aluminum producers requesting them to study plans for several plants in the Northwest in other areas, and submit them for further consideration in the overall defense mobilization plan.

The planning move was interpreted in Washington as a warning from W-



FRENCH TEST "MOCKUP" OF SUPERSONIC PROJECT

This wooden glider is on test track weeks for the projected Anson 2200 supersonic aircraft project designed at the French government's Aeronautics and Astronautics. Span is approximately 25 ft.

length about 40 ft. Wings and tail are roughly swept. The glider first flew behind a twin-engine Sabot 50 120, on May 14, 1951 and two more test flights in all. Landing gear consists of one wheel,

one wheel beneath the fuselage and one under wheel under the wing tip. Although flight tests are not to have been satisfactory, lack of funds has halted construction of the first actual powered prototype.



VALIANT SHOWS ITS STUFF

Three more of the new Vickers 680 Valiant four-jet (Bois) bomber will be built before during the recent SRAC show at Farnborough, point up the interesting new platform two photo, and the large four-jet which can be extended sharply (bottom view). The engines are completely buried

within the wing struts, with under lifting for the tailplane moved to the rear. The fuselage is now four full-sized subsonic and has large oval plans. The 660's large bomber-bomb is also noteworthy. First of Britain's new four-jet bombers, the Valiant is in production for the RAF.

New Foreign Military Developments



SUPPERSONIC ATTACKER new fighter of Royal Navy's No. 608 Squadron, first supersonic to be equipped with the new phoenix comes in for a landing with its carrier back down. The Attacker is powered by a Rolls-Royce Pave, has four 20mm cannons in the wings.



SUPPERSONIC SR (above) lands sharply at low altitude, showing the lucky landing leaving two Rolls-Royce Avons. Another characteristic is instantly hot. Though not over, the wings are of very thin section. **HAWKER P.1081**, left, (Rolls-Royce Avon) in also view, showing swept wings and tail, also external "pilot" extending along top of fuselage. P-1081 is a quantity production for RAF.



SHORT SA 4 four jet bomber shows double engine nacelles, each having two Avons. Note deep fuselage and four-wheel landing gear.



SHANDLEY PAGE MARATHON II transport in choppy displays new de-iced four-Miles reversible pitch prop.

FINANCIAL

NAL Readies for Proxy Battle

Carrier, with sharp earnings increase in last year, expects victory over dissident stockholders' group.

With its fiscal year ending June 30, National Airlines Inc., is among the first to come to issue its annual report for 1951. Addressed to "stockholders, employees and friends," the National report highlights significant developments of the company for its year just ended. There is no doubt as to the fact that the company went to great pains to put its best foot forward to counter the anticipated stockholders' proxy contest. (At that still appear, that an actual meeting will have been completed with the National management expected to prevail on all of its most recent in disputes.)

CAR Attitude. With the so-called decontrolment case against the company, threatened, a more lively attitude is markedly expressed toward the Civil Aeronautics Board. In the 1950 annual report National asserted: "The CAR has effectively blocked our attempts..." In the 1951 annual report the company now asserts: "The CAR has handled recent, especially the large volume and variety of cases before it in recent months." National further declares: "We are confident the CAR will settle the outside and other pending cases soon."

For the year ended June 30, 1951, National showed total gross revenues at \$24,158,760, a gain of \$4.23% over a year ago. Net earnings after taxes totaled \$2,189,973, or \$2.56 per share. This was the highest in National's history and represents almost a five-fold increase over 1950 when net earnings aggregated \$559,270, or \$0.66 per share.

National has thus to having the highest net operating income compared to total capital investment of one of the 16 domestic scheduled airlines for 1951. National showed a return of 36.15% on the basis.

Of course, the dissenters believe it is National's reaction of being the lowest cost operator in the industry. This claim is based on operating cost per available ton mile. This is hardly a fair measure and can in fact be applied to prove over-scheduling.

Of greater validity and of common acceptance is the measure of operating cost per ton mile actually flown. On this basis, National places itself for 1951, with an average cost of 47.99

cents per ton mile. American was the lowest-cost operator last year with an average of 41.36 cents per ton mile. **Mail Pay Need.** National also shows a decreasing dependency upon mail revenue. During the year ended June 30, 1951, its total revenues was derived from mail pay. For the 1951 period this ratio was reduced to 7.66%. "The company announced that its mail pay, which totaled \$10,170 per month, was one of the lowest per mile rate in the industry. However, on a ton mile basis, it is more than four times that of the "Big Four." For 1951 National received \$1.74 per ton mile. This compared with 63 cents per ton mile for the "Big Four" as contrasted as a percentage rate for 1950.

The "Big Four" mail rate has been reduced to 45 cents a ton mile for 1951, which would tend to create a further dependency upon mail revenue between the company and National. However, in response to the release of its report, National had announced its intention of postponing for lower and rates. This may anticipate action from the CAR. National has previously declared that its staff was reviewing mail rates for a group of air carriers with the likelihood of a strong "show case" action imposing its duties. (Associated Press, June 4, p. 10.)

National's financial position, while declared to be sound, actually shows a slight decline in net working capital. At June 30, 1951, net working capital aggregated \$1,418,616, down slightly from the \$1,615,945 shown at June 30, 1950. The actual cash position, however, is substantially improved up from \$1,518,751 to \$6,064,884.

Not Worried. By CAR's implications, the fact that the company is in the company's net worth position. This is no less \$6,773,566 to \$1,942,878, a gain of almost 44%. This net worth declaration of free cash dividends of 25 cents each in the first six months of 1951. This was the first such dividend declaration to the company's history.

Free dividends had a net depreciation value of \$7,146,501 at June 30, 1951. This was largely represented by Free equipment and consisted of eight DC-6's, six DC-4's and 11 Lockheed Lodons.

On July 19, 1951, National purchased 174,800 shares of its common stock from W. R. Grace & Co. at \$14.375

per share. This represented an capital outlay of more than \$2,500,000. Up to Aug. 30, 1951, 65,000 shares of this stock was available at a reported average price higher than that acquired in July. While the indicated accounting outlay of about \$1,500,000 may appear to be a share on the company's financial position, such a conclusion is more apparent than real.

Metrow's made of the company's ownership basis plan announced in 1949. A total of 176 employees were reported to have received average bonuses of \$5,057 during the last fiscal year. This would aggregate \$1,141,332 for the group. The program was, however, subject to the fact that of the amount, \$299,325 or about 45%, was paid to a total of 16 officers and directors.

National has agreements to purchase six DC-6's, together with the necessary engines, at a total outlay of \$6,735,000. Of this amount, \$123,948 had been made in progress payments by June 30, 1951. With data out of the new equipment scheduled through the fall of 1952, the company should experience little difficulty in paying for these acquisitions.

In the proxy outlays referred to the "Independent Stockholders' Committee," interest is made in proposed capital expenditures amounting to as high as \$15 million. Should this be the case, although this estimate is not endorsed by the management, the company with its current earnings' record is not likely to finance the brand program. At June 30, 1951, a shareholders association bank note payable was outstanding in the amount of \$2 million.

Issued bank loans may be obtained on additional common stock sold. However, this may be one reason why the management desires to have as available for general corporate purposes the 183,465 shares of common stock previously reserved for issuance by W. R. Grace & Co. and Pan American World Airways, Inc., in connection with the new proposed interchange agreement.

Stock Option. At present, 1,800,000 shares are issued and outstanding along with the 50,000 shares to be retained by general corporate purposes 11,635 additional shares are retained for the exercise of options granted two officers at \$11.75 per share. Should all of these shares be issued, there will have been 1,630,000 common shares outstanding.

Any contemplated financing moves may go forward following the vote of the management expected at the stockholders' meeting. It is known as one must that the 106,800 shares outstanding from the W. R. Grace & Co. transaction are for sale. This may be combined with a larger stock offering together with acquisition of an additional bank credit. —Selling Abstract



SUPERSONIC SCHEME for water-based plane combines delta wing with blended hull, as in the dynamically similar flying model.

Flying Boat Designs Meet Highspeed Goal

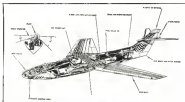
Research at Convair develops new theories to widen crafts' use.

Aerodynamic and hydrodynamic refinements have been focused to lay out the many segments of "supersonic" in the highspeed regime. There now appears to be no reason for distinction between the airplane and the hydroplane in this region.

Intensive studies at Consolidated Vultee Aircraft Corp.'s hydrodynamic research laboratory have resulted in a satisfactory solution for water-borne "skinned" aerodynamic configurations. Key efforts in the development of the relatively slow flying boat based heavily on the technology and experience of the aerial architect. But in Convair's new and progressive approach to highspeed, water-based craft, its own people ditched their old "bunlike" and adopted a new concept based on three premises:

- An aircraft is, first, an integrated vehicle designed to operate in an efficient aerodynamic configuration.
- And, secondly, some means must be provided to permit transition from the ground- or water-to-flight and back to the takeoff surface.

Based on this approach, it was assumed that all details of a specific category should be highly related and



TRANSFORMER VERSION OF transonic, water-based fighter bomber, representing a gross of about 40,000 lb., shows some studied by Mendelsohn configuration.

dynamic configurations having in general, the "same" appearance regardless of their transitory requirements. Carrying this thought further, the conclusion was that there need be no difference in the performance of a land or water-based aircraft having the same aerodynamic nature.

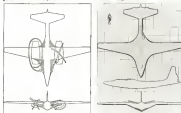
Now Convair engineers went about proving that this theory is detailed in a paper "A Review of High-Speed Hydrodynamic Development," by Ernest G. Stout, assistant to Convair's chief engineer, before the recent third inter-

national joint conference of the Institute of the Aeronautical Sciences and the Royal Aeronautical Society, at Brighton, England (American Wings Sept. 10, p. 10).

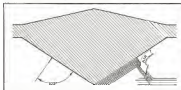
•Skinned Approach—In Convair's concept, the dynamically similar model technique has played a vital role. It was used in England, and introduced in the U. S. by Stout, who is considered one of the country's leading hydrodynamicists. Beginning in 1948, Convair started the development of free-body, dynamically similar models which



SCALE, PROPIET—highspeed airplane research program included the evaluation of hydrodynamic characteristics of these tests, sleek dynamically similar models. Experience gained with such was pooled on as refinements to succeeding models.



XD-46 MODIFICATION scheme built to give freedom and low aerodynamic drag. After taking exhaust ducts into and accommodates engine. Right: the new view of XD-46 water-based model. This configuration became Skinned No. 1.



SKIN DAM placed wet part in Convair's research. The spray control device, a metal ring on the hull bottom, actively ignites and spray blower, mixing it with air, giving high-lift, aerodynamic forces being both or no rebound from surface.

were self-propelled and manually controlled by positioning mechanism into

Months of this project gave Convair a practical means that not only gave insight to its own line and use and expense and introduced a large factor in safety in proving out the safety of a prototype before it was actually constructed—within the XP5V-1, the Navy's patrol transport waterborne flying boat (Aviation Week Nov. 28, 1948, p. 22).

After Convair's informal research program for the U. S. Navy gathered sufficient design interest for the proposal of the waterborne-powered XP5V, company engineers next dealt with another study for solving water-based needs.

•XD-46 Basis—They realized that the eventual development of a high-speed, propeller-driven configuration would provide only a temporary answer until steps were taken to incorporate propeller tips into an efficient hydrodynamic form.

Because propellers were to be eliminated, the initial study included an effort to minimize hull height and still provide adequate spray clearance for air intakes and exhaust structure.

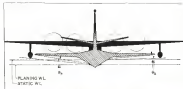
Convair had just completed the XD-46-its first jet-propelled bomb-torpedo it appeared logical to stick with the design and modify the model with maximum revision.

Various approaches were made using extreme length-bow ratios, light landing and takeoff schemes. But all of these configurations incorporated the basic elements of conventional hulls, such as sharp chines and steps, and did not provide the static buoyancy as spray control required without excessive structural resistance, aerodynamic drag.

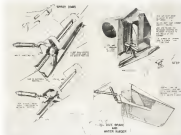
•Skinned Approach—At this point, an earlier and promising development—the initial spray strip—was brought into the picture. This scheme had been derived from the conventional V-tail hull, long used in research on planing phenomena, had never proved satisfactory for a seaplane because of the great height to which spray would run on leaving the chine. Hence, radical change criteria had dictated some form of transonic curvature-chine line.

When extreme oversailing of non-vertical airplanes became a critical factor, extensive studies were initiated to determine effect of modification of transonic curvature on spray height.

It was found that a seaplane too small would act only on a layer of water immediately adjacent to the hull and the surface of the unaffected zone would have it part the hull envelope with little change in direction. Also, if direct flow were employed, the adjacent layer



COMPARISON of blended-hull design with conventional surface of zero girth.



MECHANICAL DETAILS of spray dam, wave stop, and water rubber-line bolts.



ALTERNATE INTAKES provide air while at rest and at low maneuvering speeds.



TAILPIPE CLOSURE DOOR keeps out large slugs of water when plane is moored.

ward released from the moored area and the higher than if there were no fire at all.

► **Spray Dam**—It was then concluded that the most effective control was obtained by a generous intake opening roughly one third of the bottom and terminating with a horizontal or slightly downward direction at the chine. A single action was required—a metal strip attached to the hull surface there. This strip was progressively deflected and the spray height reduced.

There was no requirement beyond a few degrees of the horizontal, where the deflected spray should become noise. The study was continued, spray boat, and when the strip approached a nonvertical position an interesting phenomenon occurred—there was no need to reduce the spray height. The increased effectiveness apparently was due to the sharp curvature of the strip with the bottom, in effect acting as a dam. This was the prevailing scheme Chance wanted to do in one water-borne studies with the XR-46 configuration.

► **Deporting Fins Tradition**—In this respect, the boat, then an complete deviation from established naval architecture practice.

A generous wing half fillet was added to the original XR-46 configuration, and to keep the thickness ratio of the airfoil within acceptable limits, the plastic was forced forward into the bow and stern of the fuselage. Because internal area had been increased, this was offset by eliminating engine nacelles and housing the propellers within the fillets.

If spray dam on the seaward fillet could give adequate spray control the bow for a partial design would be completed—particularly with spray dam structures at flight.

A single bulkhead structural member model was built, largely retaining the basic structure of the XR-46, to check hydrodynamic characteristics, which were found to be acceptable. After minor revisions in the spray dam and strip it was concluded that spray could be controlled at the design point and that hydrodynamic visibility was satisfactory.

► **Suppression Action**—These tests showed that the spray dam was effective because it violently agitated the main spray water, forcing it through with air. The result was a deflected down with great force in a high velocity jet and protrudes the bow water surface with little or no splash. The high velocity current so generated effectively contains the mass of water not directly contacted by the dam.

The dynamic model showed that the bow wave at a speed for maximum bow spray was completely suppressed. At no point did the spray reach a height

VISIBILITY



by Swedlow

The **BOEING B-47** stratojet is the fastest known bomber in the world. This great six-jet engine powered, swept-wing bomber will be produced in quantity for the U.S. Air Force by Boeing Airplane Company, Wichita, Kansas, the Douglas Aircraft Co., Tulsa, Oklahoma and the Lockheed Aircraft Corp., Marietta, Georgia.

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MAINTENANCE plan for other version of blended-hull transonic configuration.

greater than the drag. At a reasonable loading, the flow over a four-dimensional half wing with sharp edges and thus would go completely over the wing. All dihedral flow is moderately rough entry and transverse also showed satisfactory operation, except that some form of wing riblets was needed to assure the very low skin friction element in this flow design.

Adoption of the XB-46 to a water based configuration was strictly speaking, a serious development. But it was limited to a water-based aircraft, and the data applicable to the installation of jets in transonic and supersonic water-based design.

Upon receiving the results with the modified XB-46 design, the Navy granted authorization for a research program designed to combine the benefits of the spray drag mitigation with a study of completely smooth water-based forms of high exhaust Mach number.

Blended Hull Concept—Adoption of transonic aircraft design is water based approach, without sacrificing any of the high standards of hydrodynamic performance which already had been achieved, indicated that a radical approach was necessary.

It appeared logical to start with a study on idealized models, via legislation and, through hydrodynamic research, develop new principles and applications which, though different in concept, would result in the same degree of aerodynamic and stability, and easily associated with the best hulls of conventional forms.

It was obvious that the right configuration had to be a smooth, on bodies form with high critical Mach number, without disturbance and to power diameter definition, there would have to be sufficient body volume so that engines, or skirts, exhaust openings would not be subjected to flow separation.

Combination of these two separate needs and the specific data from the XB-46 studies led logically to a

blended wing hull as the most promising approach in this basic research program.

Now it was necessary to develop a fundamental set of laws to assist the aerodynamic and hydrodynamic research, also to provide a basis for the construction of a series of dynamically similar models for research.

Aerodynamic Research—First step was to select a desirable transonic measuring platform and fuselage into from a strictly aerodynamic viewpoint. The center portion was gradually thickened to a maximum at the confluence to give the required body depth for transition. For efficient utilization every portion of the volume was placed below the natural dead plane.

Desired aerodynamic thickness ratio was maintained through the thickened center section by increasing the chord in the region in direct proportion to the maximum thickness. The base of hydrodynamic design practice was incorporated where it did not compromise the basic aerodynamic intent previously established.

It was found that straight tapered and tapered sections could be used in the hull without affecting the critical Mach number. These alterations, says Stuetgen, provided a good planning section of adequate density to show water based conduct to high speed operation. And because of the increased chord, required in the region of maximum thickness, adequate planning length was provided for good hydrodynamic operation.

It was also established that the necessary body, because of its low CG and high waterplane inertia, would float upright without auxiliary devices such as up floats.

And it became increasingly apparent that a true aerodynamic hull could meet adequately, or in some cases exceed, many established hydrodynamic design criteria.

Water Power—Principal problem of the blended hull hydrodynamic research was recognized as water separation and

flow control at the boundaries of the planing surface, and detailed study on such items as stability during takeoff and landing, waterlogging, low-speed maneuverability, etc. Description of these factors because the "Stunt Project" (Aviation Week Oct. 23, 1958, p. 14) and consisted of nine basic evaluations.

With the blended hull, it was possible to vary the length from ratio between local length by appropriate location for the retractable wing data.

A previously developed "beam selection" chart was found to apply very well to the blended hull. Stuetgen, in addition, a typical blended hull form is an approximately scaled comparable view of the XP59-1. He noted that the critical spray element, which in the conventional case is the bottom of the propeller, was very nearly the same in the blended hull. He observed that when it was considered that the spray data has proved more effective than transverse curvature and a sharp chine, the comparison became more convincing.

Because the attachment of such masses and hydrodynamic is so pronounced on blended hulls, a precise criteria is not as simple as in the conventional case, hence a specific solution is indicated for each design.

To facilitate data analysis, says Stuetgen, it was desirable to locate the base on a straight element of the planing surface and not a well formed. For best results it would be located vertically to the hull so that about one-third of its length to the center of buoyancy is out of the water at static rest. This zone is precisely delineated and there appears an increase in the amount of the device with the step.

In most cases, a full-scale depth of 1 or 6 in. for the hull was found to be sufficient.

To prevent spurious spread of other body water, a fixed characteristic was utilized at around end of the airframe.

Step, Waterlogging—The step is also retractable. It moves forward when planing because it has no access to the atmosphere at the chine. The retractor or retractorless form easily obtained from a small forward opening deep scoop. Step has a 45 deg planform with an extended depth at the level of 6:100 in the water. Step planing, an extended position, lay with the straight bottom of the body because an discontinuity here would give severe performance variability.

No control of the body can be tolerated for at least 14 degrees forward of the step, and this resulted with ventilation for an adequate deep step will give excellent takeoff and landing stability for the blended hull.

A variety of waterlogging with conventional airplanes was attributed to the flat bottom, as the waves at

high water speeds, as a result of increased hull. Stuetgen reports that the blended-hull configuration has its CG below the waterline, that is, it has step stability. Thus, the tendency to roll, and magnitude of roll under wave conditions of wind and sea, will be considerably less than with the conventional airplane. An approximately 10 deg angle of roll is required to bring the Skate-type wing into the water as compared to the conventional float position. Extensive catwalk landing studies of blended hull design, up to roll and/or yaw angles of 20 deg, have demonstrated no tendency to waterlog, says Stuetgen.

Skates were also made of composite deck brine and water rudder. High water loads required that bodies be isolated at water contact. But in speed decreased slightly, this was very effective to slow the aircraft rapidly, and used as a buffer the body gave considerable low speed maneuverability.

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Hartman 120-volt DC relays take the sting out of electrical problems in Northrop Scorpion



Photo Courtesy: Northrop Aircraft, Inc.

High-voltage electrical systems can cause real weight—and cost—considerations in a high-performance aircraft such as the Northrop F-100 Scorpion. But, however, problems in breaking large currents at the higher voltages have prevented use of the more efficient 120-volt DC system.

Solution by Hartman engineers of problems concerning interrupting capacity, operation at altitude, welding of contacts and efficiency of control, has resulted in installation of the improved equipment in the Northrop F-100—the first production airplane to employ a 120-volt DC system. In addition to serve 178-volt engine of these different types, the F-100 is also equipped with six 28-volt Hartman relays of three different types.

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Reverse Field Relay—120 volt DC (USAF Spec. 314-01, Type M 1)



General Power Relay—250 amp, 120 volt DC (CAN Spec. 2500 Amp, 120 volt)



Reverse Current Relay—000 amp, 28 volt (AN-105-21)



Air Force Relay—18 volt (AN-105-1)

the Hartman Electrical Mfg. Co.

MANSFIELD, OHIO

figures substantiated all anticipated requirements for drag, lift, stability and control, says Stout. High speed was at the order of Mach 0.95—indicating that level flight transonic performance could be attained with a hydrodynamically proven water-based aircraft coupled in accordance with the blended hull concept.

Delta Wing Blended Hull-Wing regard to water-basing of airplanes, says Stout, looks like because the major portion of the problems involved lies in the solution design and largely involves integration of a suitable transition leading device into a basic airframe design, there is one reason to suppose that a supersonic solution is merely a matter of time and within the capabilities of current or newly techniques and techniques.

Studies have been begun to ascertain the basic parameters of supersonic water-basing. It has been found that the fundamental hydrodynamic problem is the extension of basic planing theory and aspect elevations to much higher water speeds than previously considered.

While continuously lower power loadings will increase the net accelerating force for takeoff, resulting in shorter takeoff distance and time, the actual primary speeds are going to rise steadily.

say Stout, due to increase in wing loading and reduction in maximum lift inherent in these configurations.

In view of Conner's extensive experience with the delta-wing NF-96A and the present delta wing scheme shows, it is natural that this aerodynamic form should be employed in the supersonic research program.

The hydrodynamic configuration offering the least component with water and low speed operation, says Stout, appeared to be the blended hull. And because of the basic experience with hulls during the Skala project, it was chosen for preliminary studies.

Now again, a dynamic flying model will be used to investigate a flying delta wing. In this case all the increased impact loads due to higher jet speed, the desired, but have been crossed to give the same structural load required for conventional design. With power loadings that will be available, says Stout, high density hulls as in the application load great pressure for successful rough water operation at very high gliding speed.

A wind-tunnel model of the configuration indicates that the desired aerodynamic cleanliness and performance is attainable.

With the research program well into the consideration of separate design,

Stout controls that it is safe to say that the probability of achieving the original objective is excellent and that it is not too early to give high-speed water-based aircraft serious consideration in strategic planning.

Wave Shaper

Belknap Laboratories, 596 Lexington Road, Concord, Mass., announces that new Labmarker, wave-shaping device for producing time marks in cathode ray oscillography.

The Labmarker converts a standard input into a series of sharp, well-defined pulses. These pulses may be displayed directly on the tube face by connecting the Labmarker output to the vertical input of an oscilloscope. Timing marks consisting of breaks in the oscilloscope trace can be obtained by connecting the Labmarker output to the "Z" input terminal.

The unit is self-contained, and may be plugged into the terminals of an oscilloscope.

Models are available which give pulses at either positive, negative or both polarities. Peak amplitude of the output pulse is about one-tenth of the input voltage, which may be up to 50v. Frequency range covered is from 25 cycles to one megacycle.



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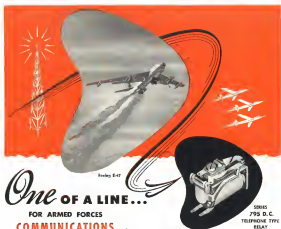
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► **Flexional Strength of Stiffened D Tubes (TN 2162)**—by E. F. Kavanagh and W. D. Drenth.

The purpose of this investigation has been to develop a chart that will permit the estimation of the ultimate flexional strength of stiffened D-sections.

A series of flexional tests was made on stiffened D-tubes of Alclad 24 S T5 aluminum alloy with a cross section similar to the NACA 0014 airfoil section, the closing web is at 50% of the chord. Stiffeners consisted of ribs and stringers.

An average strength chart has been developed for this type of structure that takes into account the skin thickness, rib spacing and stringer spacing. This chart may also be used for axial-tension failures.

Unit loads and unit strains were measured at a number of points on most of the specimens. Measurement of the unit loads indicated agreement between the type of structure and theory below the buckling point. However the unit-strain measurements could be verified by theoretical analysis only for the strains measured in the webs.

► **Fatigue at High Sliding Velocities of Oxide Film on Steel Surface Bound-Air-Lubricated with Sulfuric Acid Solution (TN 2163)**—by Robert L. Johnson, Marshall R. Preece and Miss A. Swales.

Marginal boundary lubrication has resulted from the use of low-viscosity oils in aircraft engines to allow satisfactory operation at low temperatures.

Use has been considered of lubricant additives to provide increased load capacity at sliding velocities. The object of the research reported in this note was to investigate a fatty acid (stearic acid) as an additive for the lubrication of steel at high sliding velocities; a further object was to determine the effect of proposed surface oxide film on lubrication by fatty acids.

It was found that lubrication with stearic acid as an additive in oil was effective at sliding velocities up to 1,000 feet per minute, both for clean steel surfaces and for surfaces coated with oxide.

The experiments indicate that the type of surface oxide and the thickness of the oxide film are important in determining the effectiveness of additive.

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EQUIPMENT



40-4 SCHEDULE calls for delivery of 40 planes to TWA by June, 1951.

TWA Bustling With 4-0-4 Plans

Experience with 2-0-2 easing way for debut of larger Martin craft: first delivery due late this month.

By George L. Cleveland

Kansas City, Mo.—Trans World Air Lines Inc. has Martin 2-0-2s and looks forward to the arrival of its fleet of larger and angrier Martin 4-0-4s.

The 2-0-2s is popular with TWA's engineering executives. Robert W. Kimmel, the airline's chief engineer, and Raymond M. Dunn, director of engineering and maintenance.

Kimmel told AVIATION WEEK that the 2-0-2s was introduced into school and service work fewer delays and unexplained problems than are other new aircraft in TWA's experience—and that included the Douglas DC-1, DC-2, DC-3, Boeing Stearman and Lockheed Constellation. For example, in the first month of operation, the 2-0-2s had only 18 malfunctions per 1,000 flying hours whereas no other new type of airplane introduced several years ago. TWA had 24 malfunctions per 1,000 hours.

In fact, during the early period of Martin operation, TWA flew more block hours per dollar with the 2-0-2s than it did with some of its four-engine equipment.

► **Big Trouble**—As would be expected, after the airplane accumulated flying hours, some "bugs" did develop. During the winter the malfunctions increased. But these bugs have responded well to corrective action, as evidenced by needed decrease in current troubles. TWA asserts that the 2-0-2s engines have been remarkably free from problems, ranging from minor difficulties to engine failures.

Both Kimmel and Dunn are hopeful that the 4-0-4 will be even easier to in-

stallate, since the airline's flight and ground personnel will have had more than a year's experience with its predecessor on which to build a smooth debut for the larger, powered aircraft.

First of the 4-0-4s is scheduled for delivery during the latter part of this month. By the end of the next month, one additional aircraft will have been added. Deliveries are laid out so that by the end of the year TWA should have received 12 of this model. By June, 1952, the entire fleet of 30 Martin 4-0-4s will have been delivered.

► **Getting Ready**—TWA is busy preparing for the 4-0-4's arrival. The program has been under way since spring 1949 when the 2-0-2s introduction program was launched.

Introduction of the 4-0-4 into TWA's domestic service should be expedited considerably because much of the planning for it overlapped planning for the 2-0-2s. But two new schemes should prove a serious strain, Kimmel said.

The first is the 4-0-4's record will be assigned to pilot training. Crews already checked out on the 2-0-2s will be given extensive ground training to familiarize themselves with the new differences in the two aircraft. Then will also receive transition flight.

While not having experience on the 2-0-2s will be given specialized ground training and flight transition time until they are completely familiar with the plane. The actual amount of training given to 2-0-2s crews will depend largely on how similar the two planes are. TWA expects it will take seven

months to check out the necessary crews for the whole fleet of 4-0-4s.

Ground school instructors already have been sent to the Martin plant to be trained on the 4-0-4 and a training course has been set up at the airline's main base here for the flight personnel. Its aircraft flight crews will be trained at the Martin plant. They in turn will check out additional flight instructors to form the cadre of TWA's 4-0-4 check pilots.

► **Route Familiarization**—Before flight crews take the plane into commercial service, they will be given 25 hours of route familiarization over the airline's flying and air ports.

Virtually every department of TWA is currently working on some phase of the 4-0-4's debut. Kimmel is serving as coordinator in integrating the plane into the airline's schedule and route pattern.

One of the planes, with a corps of instructor personnel, will visit each line station to point out differences and ground personnel. Instructors will also be talking with their respective duties on the aircraft.

Dunn, TWA's maintenance and engineering director, has set up detailed maintenance training for the airline, including allocation of the 4-0-4 for maintenance at the overhaul base.

Because of all this training, the planes will have flown many hundreds of hours before the traveling public will find it new.

From a traffic standpoint, TWA anticipates that the more refinements for increased passenger comfort will attract new business, and plant regular run routes as well, especially in those areas where 4-0-4s will replace DC-3s currently in service.

TWA already has found that passengers like the 2-0-2s' full loading ramp and the advantages of service by TWA's 2-0-2s currently are flown only between Kansas City and New York with intermediate stops. The 4-0-4s will be flown from coast to coast with stops in Seattle.

The airline now has 65 Constellation units flying from San Francisco as far as Memphis, India. Two Super Constellations are scheduled for delivery next year. The 2-0-2s now under lease from Martin will be returned in place as the 4-0-4 deliveries have been completed and received.

Pan-Am Standardizes Strato-cruiser Props

Propellers on Pan American World Airways Pacific-Atlantic Division Boeing Strato-cruisers will soon be standard from Curtiss Electric to Hamilton Standard. The change means that the two planes are the same up to square top props, at

NEW AVIATION PRODUCTS



Autopilot Control

An automatic altitude control, accurate to ± 25 ft. and designed for use with the E-2 and other autopilots, has been placed on the market by Lear, Inc. The control, in conjunction with the autopilot, maintains the plane at a constant transonic pressure altitude through an effective operating range of 1,000 ft. above sea level to 30,000 ft. above.

The device is simply constructed, Lear stresses. It has no gear trains, employing instead a piezoelectric sensitive bellows, an electromagnetic diaphragm clutch and an electrical "EI" pick-off differential transformer.

A switch is closed to energize the electromagnetic clutch. This closes the sensitive bellows to the electrical EI pick-off.

Main function of the bellows is to supply linear motion with any linear change in altitude. Expansion or contraction of the bellows, caused by change in altitude, rotates the clutch disc which transmits this motion to the clutch bearing, since to a bearing shaft which rotates the "EI" of the EI pick-off, inducing an unbalanced signal voltage in the pick-off coils. The signal voltage is fed in input to the elevator channel of the autopilot amplifier, which amplifies the signal and transmits an output for the elevator servo.

The control is available for 12 and 24v systems. It is housed in a cylinder 3.75 in. in diameter, 2.55 in. high and weighs 1.1 lb., less the mounting. Lear, Inc., 11916 W., Pico Blvd., Los Angeles 64.



Metal-Nylon Bearing

Proving there's more than one way to turn a cap, Thomson Industries, Inc., has developed a new Nylon bearing which strikes the advantages offered by the material as a bearing surface, but avoids its shortcomings.

Called the "Nylond" bearing, it is expected by the firm to extend the use of Nylon as a bearing material into many aviation and other applications previously found unsuitable. Unlike plain injection-molded or machined Nylon bearings, the part cavity of an entire sleeve of inexpensive metal and a thin lining of Nylon (du Pont's PM 1000) bearing materials.

The new bearing permits closer fits, more uniform load distribution, averaging greater load capacity and life, says

Thomson. Wide clearance necessary in the usual Nylon bearing to compensate for dimensional changes are eliminated. They are taken up by a compensation gap in the inner web of an appreciable effect on the diameter of the bearing. Thomson Industries, Inc., Madison St., L. I., N. Y.

Airborne Case Valve

A case of adding a little weight to rub out a bigger weight is now in a new valve for customers preferring airborne components.

The valve, Avco Series 1051, acts as an emergency one-way vent. It permits quick entry of atmospheric air pressure if internal pressure in the container is so low (down extended high altitude flight) as to cause it to collapse during rapid descent of the aircraft. The valve can be used with cases which must be airtight and do not vent; are fast enough to equalize the external pressure with the suddenly increased atmospheric pressure on the outside.

Since extreme pressure differentials of this type are eliminated by the valve, the container does not have to be "bolted up" to withstand them and can be constructed of lighter materials than steel, the maker explains. Also, the valve provides a means of venting the case so the cover can be removed

Associated Valve and Engineering Co., 1150 W. Marquette Rd., Chicago 21.



Tube Protector

Prediction of a "delayed root loss delay valve," designed to protect vacuum tubes under rugged operating conditions in military aircraft has been started at the A. W. Hudson Co.

The unit "mounts the desired delay in lowering high voltage to the plate cut, backing back the load until the cathodes have reached proper temperature," explains Hudson engineers. Also, in event of a power interruption, it opens the vacuum.

Specifically, the relay makes possible a delayed root proportional to the time delay and a current releases time proportional to the length of current interruption. An example is a radio stabilization in which a 15-min. delay is provided prior to closure of the load circuit. The time required for the root to react is 7 min. When a current is interruption less than 7 min. duration occurs, the time delay before release is proportional to the length of current interruption. In other words, a 3-min. interruption, for example, could require only 3 min. before current restoration—eliminating needless "down time" for the radio set.

A. W. Hudson Co., 212 N. Elba St., Watohary, Conn.

Space-Saving Motors

Low inertia servo motors, emphasizing space- and weight-saving features, are being produced in several models by Paul Instrument Co.

The motors eliminate the need for transformers. This is achieved by building them with high voltage control windings, says Paul. They also have close-wound windings for fixed load purposes. Motors are available in 5, 15, 50 and 100-watt sizes.

Ford Instrument Co., 1130 Thomas Ave., Long Island City 3, N. Y.



Hot Forming Delivers Hot Fighters!

Scorpion F-4's gain strength and safety, as well as faster delivery, through a new Hot Forming manufacturing technique—time- and temperature-controlled heating during close-to-form heating of thick section alloy materials. A Hot Forming manufacturing technique at Northrop saves thousands of man hours per month. The result is considerably high speeds in producing Northrop F-4's. Scorpions—fast, heavily armed, electronic weapons equipped—already service combat units of the U. S. Air Force and the new standard of all weather interceptors of the U. S. Air Force.



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AIR TRANSPORT

CAB Takes New Look at Nonskeds

Irregular carriers get indefinite reprieve of 'death sentence,' pending investigation of their changed role.

By F. Lee Moore

The Civil Aeronautics Board has called off its so-called economic "death sentence" of the \$100-million annual safety business, pending formation of a brand new CAB policy. The 61 nonscheduled airlines now having unscheduled letters of registration and individual occupancy applications in the CAB will now continue operating.

CAB has announced it will hold a full-fledged hearing and investigation of the unscheduled industry, in light of "serious and significant changes in conditions affecting air transportation and the place of non-scheduled operations in the air transportation system."

But there is a potential joker in the CAB announcement. The press release accompanying the investigation says the "under participating the effectiveness of the 'three-and-eighty' limitation does not mean that any of the principle carriers . . . can conduct operations between any two points other than on an irregular and infrequent basis."

This means the larger numbers must not back this general level of operations in face CAB action to throw them out of business. CAB says it will avoid the letter of registration of any nonscheduled carrier regularly. The "nonscheduled" has never been defined by CAB, but it generally has meant considerable less than 15 round trips a month between two cities.

Question is: How will CAB interpret "regular" scheduling from now on. According to the Senate Small Business Committee, its expectation was for CAB to let the 61 nonscheduled operate as before until changes of the new one.

The CAB investigation under attack the following questions that the Board will seek answers to:

- Should nonscheduled stay in business, providing service supplemental to that of the scheduled scheduled airlines?
- If so, what type service should the CAB let the nonscheduled give?
- What effect would unscheduled operation have on regular airlines and public welfare?

• Should nonscheduled stay in business, providing service supplemental to that of the scheduled scheduled airlines?

• If so, what type service should the CAB let the nonscheduled give?

• Should the new-type airline class be set up by exception, temporary certificate, permanent certificate, or by various means depending on individual airline's case?

• How should CAB regulate the new so-called "flex-class" air transport in days of such is set up?

• New Factors—That is CAB's estimate of the Board policy and legal questions it will decide on the investigation. The Board apparently came around to its decision to draw new regulations on a close date after their following recent developments:

• New Board: The majority of the present five-member Board is new—the time Board that started the strict regulation of nonskeds.

• Focus-out: The strict three-trip-a-month regulations would put most of the nonskeds out of business, CAB found, and force the rest to revert to fixed-base charter business, eliminating what has now become a \$100-million low-line business that makes a new wave market for air travel.

• Clear action—The U. S. District

Court opened CAB against enforcing its 3 trip limit on nonskeds, because it automatically put them out of business without benefit of a hearing.

• Congressional pressure. The Senate Select Small Business (Spokane) Committee and some Senate Civil Aeronautics Committee members put more and more outside pressure on the Board to reconsider its "death sentence" regulations, while CAB Member Joseph Adams argued that the same law written the Board. New CAB Chairman Donald Nyrup had taken no previous threat, he finally refused to hold a full-blown hearing and new Member Glen Corcoran and CAB old-timer Orville Ryan and Jack Lee followed him lead.

CAB Chairman Nyrup told Senate Committee Chairman Sparkman of the CAB's decision and reportedly promised to hold off an enforcement proceeding.

• What CAB Wants—The Board in its new order of investigation says that if it decides there should be an air travel industry, CAB will make regulations.

• To protect air transport "adequacy" to protect and future needs of the foreign and domestic commerce of the U. S., of the postal service, and of the national defense.

• To "promote the inherent advantages in such transportation."

• To "promote efficient, economical and efficient service to air carriers at reasonable charges, without unjust discrimination, and/or preference or



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Striped-down test production model Super Constellation is now loaded with water bullet tanks, pumps, electronic meters, cameras, sound recorders and other special equipment for its factory and CNA service.

time flight test program. Set to 31,000 feet exposed to put the big plane through its paces. During its first 24 flights the Super Connie carried up 51.3 flight hours. Photo was taken just forward of the main door.



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venue, once the Bermuda meeting, showing the results of tourist fares.

More arguments at London against the tourist fare was insistence by foreign carriers on a 27% profit on overall operations (which tourist fares would detract a further 3% point) as a hedge against inflation, and the European carriers' insistence that once flights due to tourist fares mean higher costs.

For American designers with all their points and particularly the last PAA says the foreign lines are having cost estimates on a 55% load factor while PAA, the only carrier concerned that has operated international coach service, has always had at least a 75% load factor on coach flights.

An coach plane must carry more passengers, seats, PanAm contracts, so the yield per fully loaded flight would be the same or better and number of flights would be more, as economic studies show lower fares rarely opened potential market.

► **Benefits Ahead**—With its announcement that it will start tourist services next April even though no effect current fare, PAA obviously is happy to take some definite action at the Nice meeting in November. If any can succeed because there are some high hurdles along PAA's national course.

PAA's claim it has a perfect right to start its own coach service, without giving up IATA membership, even though no other IATA member goes along. It says fares are dependent upon continuous agreement by all carrier involved. If there is no agreement, there is an "open rate" situation where each carrier can make its own rule.

That, however, still leaves the government angle. While CAR's power over international fares may be uncertain, its power over PAA's mail rule is not. And low passenger fares sometimes mean a real rate to high CAB objects. But even if CAB backed PAA, foreign governments would still have to approve PAA's fare. The approval might be tougher to get, particularly in Britain.

PAA doesn't think so. It believes that BDMC, a de facto opponent of a 52%–53% fare, is not representing the government view—only through BDMC is a state representative. And PanAm says the same thing about Air France.

PAA is counting on the fact of more dollars from tourists in view of the foreign governments to the sale of increased trans-Atlantic air service. In a speech last week before the Foreign Travelers Assn. at Philadelphia, PAA President John F. Trapp said that the \$1.5 billion American tourists spent there in 1950 could be increased to \$1 billion if air lines were low enough to stimulate increased travel abroad.

PanAm hopes that will be its most potent argument for tourist fare air travel.

Subsidy Bill Seen Favoring Sked Lines

Legislation separating air mail pay from subsidy passed by the Senate added up to a victory for the scheduled airline industry on the issue points at issue.

House action on the measure is not likely before the new session convenes in January.

► **Postmaster**—The Senate passed bill provides:

• Five categories of compensatory mail pay ranging from 45 cents a ton mile for the Big Four to \$1.80 for local carriers. These rates would be effective until and when the Civil Aeronautics Board, after hearings, establishes different compensatory rates.

• A compensatory rate for international carriers of "not to exceed" the Universal Postal Union rate, now pegged at \$2.86 a ton mile.

• Direct subsidy grants to certified mail carriers in the "commerce" or "national defense" markets. CAB is authorized to enter into temporary subsidy contracts with domestic lines and foreign carriers with international carriers, with discretion as to whether to make binding contracts or contracts subject to later review, approval or disapproval.

► **Flight Carrier Rule**—The Senate also passed certified freight loss reimbursement. An amendment by Sen. McNamara restricting subsidies to loss certified to carry mail was dropped. It is the prerogative of the Department of Defense which reported a primary interest in development of freight air mail.

Undercarriage of the Air Force, John McNamara, had written Sen. Johnson, member of the aviation legislation. "It is the opinion of the Department of Defense that it would appear to be inconsistent to deny to the postmaster the possibility of a decrease in the national interest, of subsidizing operations of heavy freight aircraft requiring little conversion for military use."

The opposition to the McNamara amendment was led by Sen. George Aiken, Paul Douglas, Herbert Lehman and John McNamara. Aiken predicted it will "contribute toward a renaissance of the always working argument on rates which have not been considered in the usual way in the past. It is not even worked to achieve non-mail certified subsidies in an emergency, and probably will add considerably to the cost of government." McNamara argued that the certified freight lines have repeatedly stated that they do not want or do not need government subsidies.

The Senate struck out the words

"without reduction" in providing for one-way domestic airline subsidy contracts and for intercontinental subsidy contracts. This would have prevented CAB to revise contracts upward, but not downward. Sen. Owen Brewster led the opposition to this revision.

An amendment by Sen. Douglas which would have given compensatory mail rates for intercontinental carriers to actual cost of carrying the mail was defeated 58 to 33. The Douglas amendment was supported by Postmaster General James Douglas and endorsed by CAB. Printing out that the mail cost over the trans-Atlantic route is only 85 cents a ton mile for Trans World Airline and 98 cents for Pan American Airlines, Douglas argued that the \$2.86-a-ton mile Universal Postal Union rate will provide "a substantial level of subsidy as a rate that supports to be a competitive rate."

But a Douglas amendment was adopted providing for termination of subsidy payments to any carrier whose agents or representatives have provided guarantees of any type, including an agreement to a government official "with a view toward securing favorable treatment."

► **Aiken Objection**—Sen. Aiken observed: "If there is any bill which leads to build-up an almost self-sufficient for a single part of a single industry, this is it. I want to make myself clear on the record as being so much in building an absolute monopoly in an transportation between America and Europe for any one or two single airlines."

3-Class Service

Storage standard and luxury accommodations will all be available on the same plane when United Air Lines starts flying a proposed experimental West Coast daily service. United offers three classes of service at three prices on a daily Los Angeles-San Francisco-South Sacramento flight.

On a sold-out three-class UAL flight between Los Angeles and San Francisco, 11-inch passengers will ride in the lower-deck lower and pay \$13, 15 standard fare passengers will ride in the main upper cabin and pay \$21.00, and a small handful of business class passengers will ride in the upper-deck upper and pay \$35.00 each, including tax.

The daily three-class flight will be in addition to United's present 19 daily nonstop flights, Los Angeles-San Francisco and seven round-trips, San Francisco-South.

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a reactive line in mail order trade CAR showrooms color. From June 1, 1950, to June 30, 1951, the company would get an extra \$23,000, this base rate per mile, July 1 to Sept. 30, 1951, of 50 cents, thereafter, Aug. 1-Sept. 30 each year, 40 cents, and Oct. 1-March 31, \$11.2 a mile.

►American Airlines—August traffic of 247,771,000 passengers, which almost topped the June record of 248,043,000, was 41% over July. AA expects first September topped them all. Carriers also agreed on restrictive air arm agreement with Pan American Airlines.

►California Eastern Airlines—It directed by a Chancery Court to hold a special stockholders' meeting to elect directors Oct. 10 at Corporation Trust Co., resident agent at Wilmington, Del. A stockholder owning 15,132 of the 1,124,000 shares controlling got the court to call the meeting of stockholders.

►British European Airways—Starts London-Penn service with the new 46-seat Airspeed Ambassador Oct. 21. It is a high wing transport with 2,500-hp. Bristol Centaurus 18-cylinder radial engines, cruising over 26 tons. Cruising speed is 215 mph at 15,000 feet.

►Central Airlines—Carried over 4,800 passengers in August—a record for the line. Total passenger figure, January-August this year, is 35,840, all on 24-passenger DC-4s.

►El Al Israel Airlines—Is the new corporate name of the former El Al Israel National Airlines.

►Flying Tiger Lines—Has opened early 11,000 line service from Puerto Rico to tourist fields in the northeastern U. S. since April. Flies 60 passengers C-46s and one 101-passenger DC-4 used in transporting the large number.

►International Air Transport Association—Traffic conference now set up a traffic management committee, recommended by IATA. Describes of American Airlines to keep up with management and economic problems. Describes the committee should study major basic traffic policies "in the light of their effect on the trend of fares and rates and pressure on profits. The trend toward a general increase of how an increase for a popular service can very well enhance the hard facts of business."

►National Airlines—Estimates June-July-August net profit at a total

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\$100,000, compared to \$166,000 a year ago, after federal income taxes. Passenger miles, July-August, gained 14% over a year ago. August's \$1,043,327 revenue passenger miles were up 49% from December's \$1,000,000. "We should be able to move into our heavy winter season nearly 50% ahead of our position last year." The new daylight coach service operated at a 70% load factor the first 32 days after inauguration. Carrier had estimated its \$109 "baggy bank" recession from Sept. 30 to Dec. 15.

►Northeast Airlines—DC-3 made a forced wheel-up landing at Weymouth, Mass., Navy daylight base after cabin engine caught fire. No one was hurt. Plane was towed from Boston to New York.

►Pan American World Airways—Has started flying a third weekly 56-passenger Stratocruiser flight to Tokyo. Pan Am expects a rapid build-up in travel to Japan. Even before World War II, 40,000 Americans visited Japan in peak tourist years.

►Piedmont Airlines—Carried a record 20,555 passengers in August; load factor was 97%, also a record.

►Portland International Airport—Is the new name of the former Portland Columbia Airport. City leaders moved the airport on completing a 9,300-ft. runway, placed at the long-end commercial strip on the West Coast.

►Seattle-Tacoma International Airport—Reports no passenger traffic during Seattle up 23% over a year ago to 411,925 the last seven months this year.

►Southern Airways—Flies fewer buses in many passages (10,000) this August is a bid.

►United Air Lines—Has released a bulletin line dealing "heavily" with weather problems and their efficient solution, the 19-minute commentary covers flight planning, cockpit, pre-flight, instrument approach, and other features of a coast-to-coast flight. Title is "United 6134". UAL set a company record when 199,517-800 revenue passenger miles in August, 29% over a year ago.

►Waco Alaska Airlines—Would get retractor and pay gas in a C-47 show-concise record 3,000,000 over post-war record. In 1941, to May 31, 1951, this airline 75 cents a mile. April/September, and \$1.21 a mile October-March.

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Taming the Giant's Roar

Hereby it says so, but we say airplanes are another case they need to be.

And that if we ignore the noise problem much longer, sooner will be in very hot water.

And we think that of all people who should be most worried, it's the airlines.

The public's tolerance point is probably higher for airplanes than for commercial ships. It feels that at least military aircraft are meant for our own defense, that in necessary instances, they can't have refinements and amenities, and that they are not getting in big profits from our discomfort.

Most airplanes are small and make comparatively little noise. The average executive aircraft may be larger and noisier than the grandpa's but their fleets are not large and their noise is not constant. The big blat will be directed at the airlines, we believe.

Someone in the air transport industry ought to be worried, at least, about the matter, and worried to the extent of starting some kind of action.

But inquiries we looked last week with the Air Transport Association, drew a blank on any report of major concern within the industry, or any report that anyone is doing the slightest thing about it, or intends to. Outside the ATA, one small contract cargo carrier, Metro Air Transport, of Teaneck, N. J., is experimenting with a muffler on a DC-3. Haha off to them, and to the carrier's maker, Aero Space Corp. of Brooklyn. Our readers were told about this development Sep. 17.

The airlines are living in a fool's paradise in this noise matter. It will be difficult to shift much longer that their major objective is to keep the well from the door in order to keep alive at all.

The air transport industry not only is making money now, it is making, and industry brings new public obligations it will have to tackle sooner or later. If it decides this noise battle now it can grasp the initiative and keep it. If it fails to take the initiative the battle will be tough, and unecessarily so.

Not a few problems going to be used any by the in available jet transports—except for the lack, passengers.

We are not concerned at this point about the noise the customers get. They know they are going to get it, they buy their tickets with their ears wide open, and they get something in return for it—fast transportation. The poor deal on the ground—John Q. Public—feels he gets it for no good reason, 24 hours a day, and it follows him wherever he goes. Every new contract for airlines he reads about in the papers will come to some point that much more before he can look forward to.

For not much longer will be accept the thing of the shoulder plant that all this ever-increasing din in the sky is a necessary part of progress. Not with all the brilliant minds we have capable of performing these jobs. Not with all the profits the airlines are making. He will demand that somebody "do something."

And when John Q. Public really gets started on this one, the indignation will be something the industry never

see before. Millions of citizens are wowed, not a few thousand customers who can take airplanes or leave them alone.

Only a few hot-spotted localities containing the night explosive combination of strong-minded civic officials or state legislators are all we need to set off a chain reaction from coast to coast. It will hit the airlines right where they have never been hit seriously before by some complaints—the money bags. The airports from the vicinity of La Guardia and Newark had better be interpreted for what they are—large signals heralding a reaction.

At least, let's be able to tell the public we are trying to think up some answer. Then do it. We can't say longer yell that "Noise is progress," and hide our heads in the sand until it all "blows over." We have got to do something more than answering isolated fire alarms such as La Guardia and Newark with hastily conjured solutions from our public relations and legal department.

Let's get down to figuring what we can really do to make airplanes quieter, as they already look, and as they will be built next month and next year.

A New Look at Nonskeds

The Civil Aeronautics Board has made an intelligent decision in its move to conduct another comprehensive investigation of the nonscheduled air services of the sky-odd large irregular carriers.

For subjects as aviation have been discussed so inadequately, with so much heat, by so many experts, agencies, committees, and even the public, who cannot seem to understand what all the fuss is about.

The last good look CAB had at so-called nonscheduled air services was in 1946, when the term nonscheduled aviation had very different meanings and very different business and public implications from those of today.

We shall watch the new investigation closely. If it is based on facts and an honest effort to ascertain the facts, let the chips fall where they may. So long as the result be safer, cheaper air transportation for the mass people.

Shoottalk

AVIATION WEEK has named Byron C. Driscoll as its new correspondent in Dayton to cover the really important Air Materiel Command. After newspaper from a.g. on the Hammond, Ind., Times, Mr. Driscoll went into the Air Force and was assigned to the press section of the public relations office of the old Air Service Command, holding various assignments until 1945, when he left the service. He worked briefly for the Dayton Journal before returning to Wright-Patterson AFB as a civilian employee. He became assistant editor of the Wright Times, employee and service newspaper at the field. About three years ago he went to Procter & Gamble Industrial Fluorizing, becoming its public information officer until he resigned last Aug. 3.

—Robert H. Wood

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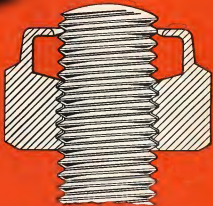
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